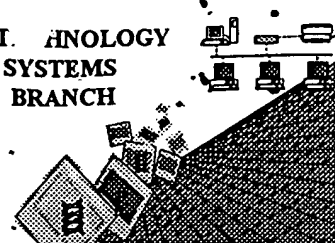


BIOT. TECHNOLOGY
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RAW SEQUENCE LISTING ERROR REPORT

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09 / 751,708
Source: OIP E
Date Processed by STIC: 3-15-02

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FOR CRF SUBMISSION QUESTIONS, PLEASE CONTACT MARK SPENCER, 703-308-4212.

FOR SEQUENCE RULES INTERPRETATION, PLEASE CONTACT ROBERT WAX, 703-308-4216.

PATENTIN 2.1 e-mail help: patin21help@uspto.gov or phone 703-306-4119 (R. Wax)

PATENTIN 3.0 e-mail help: patin3help@uspto.gov or phone 703-306-4119 (R. Wax)

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Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

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Corrected Diskette Needed

OIPE

RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

1 <110> APPLICANT: TERMAN, David S <120>
W--> 2 <130> FILE REFERENCE: 870759
W--> 0 <120> TITLE INVENTION:
W--> 3 <140> CURRENT APPLICATION NUMBER: US 09/870,759 <141> 2001-05-30 <150> US 60/208,128
<151> 2000-05-30
E--> 4 <141> CURRENT FILING DATE: 2000-12-28
E--> 4 <160> NUMBER OF SEQ ID: 166 <170> PatentIn version 3.1 <210> 1 <211> 801 <212> DNA
<213>

ERRORED SEQUENCES

Major formatting error from PatentIn. Contact
Bob Wax at 703-308-4216 for help.

189 <210> SEQ ID NO: 8 <211> 257 <212> PRT <213> Staphylococcus aureus <400> 8
W--> 191 <211> LENGTH:
W--> 191 <212> TYPE:
W--> 191 <213> ORGANISM:
E--> 191 <400> SEQUENCE:
191 Met Lys Lys Thr Ala Phe Ile Leu Leu Leu Phe Ile Ala Leu Thr Trp
192 1 5 10 15
195 Thr Thr Ser Pro Leu Val Asn Gly Ser Glu Lys Ser Glu Glu Ile Asn
196 20 25 30
199 Glu Lys Asp Leu Arg Lys Lys Ser Glu Leu Gln Gly Ala Ala Leu Gly
200 35 40 45
203 Asn Leu Lys Gln Ile Tyr Tyr Tyr Asn Glu Lys Ala Lys Thr Glu Asn
204 50 55 60
207 Lys Glu Ser His Asp Gln Phe Leu Gln His Thr Ile Leu Phe Lys Gly
208 65 70 75 80
211 Phe Phe Thr Asn His Ser Trp Tyr Asn Asp Leu Leu Val Asp Phe Asp
212 85 90 95
215 Ser Lys Asp Ile Val Asp Lys Tyr Lys Gly Lys Lys Val Asp Leu Tyr
216 100 105 110
219 Gly Ala Tyr Tyr Gly Tyr Gln Cys Ala Gly Gly Thr Pro Asn Lys Thr
220 115 120 125
223 Ala Cys Met Tyr Gly Gly Val Thr Leu His Asp Asn Asn Arg Leu Thr
224 130 135 140
227 Glu Glu Lys Lys Val Pro Ile Asn Leu Trp Leu Asp Gly Lys Gln Asn
228 145 150 155 160
231 Thr Val Pro Leu Glu Thr Val Lys Thr Asn Lys Lys Asn Val Thr Val
232 165 170 175
235 Gln Glu Leu Asp Leu Gln Ala Arg Arg Tyr Leu Gln Glu Lys Tyr Asn
236 180 185 190
239 Leu Tyr Asn Ser Asp Val Phe Asp Gly Lys Val Gln Arg Gly Leu Ile
240 195 200 205
243 Val Phe His Thr Ser Thr Glu Pro Ser Val Asn Tyr Asp Leu Phe Gly

The type of errors shown exist throughout
the Sequence Listing. Please check subsequent
sequences for similar errors.

244

210

215

220

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

247 Ala Gln Gly Gln Asn Ser Asn Thr Leu Leu Arg Ile Tyr Arg Asp Asn
 248 225 230 235 240
 251 Lys Thr Ile Asn Ser Glu Asn Met His Ile Asp Ile Tyr Leu Tyr Thr
 252 245 250 255

255 Ser

362 <210> SEQ ID NO: 10 <211> 266 <212> PRT <213> Staphylococcus aureus <400> 10

W--> 364 <211> LENGTH:

W--> 364 <212> TYPE:

W--> 364 <213> ORGANISM:

E--> 364 <400> SEQUENCE:

364 Met Tyr Lys Arg Leu Phe Ile Ser His Val Ile Leu Ile Phe Ala Leu
 365 1 5 10 15
 368 Ile Leu Val Ile Ser Thr Pro Asn Val Leu Ala Glu Ser Gln Pro Asp
 369 20 25 30
 372 Pro Lys Pro Asp Glu Leu His Lys Ser Ser Lys Phe Thr Gly Leu Met
 373 35 40 45
 376 Glu Asn Met Lys Val Leu Tyr Asp Asp Asn His Val Ser Ala Ile Asn
 377 50 55 60
 380 Val Lys Ser Ile Asp Gln Phe Leu Tyr Phe Asp Leu Ile Tyr Ser Ile
 381 65 70 75 80
 384 Lys Asp Thr Lys Leu Gly Asn Tyr Asp Asn Val Arg Val Glu Phe Lys
 385 85 90 95
 388 Asn Lys Asp Leu Ala Asp Lys Tyr Lys Asp Lys Tyr Val Asp Val Phe
 389 100 105 110
 392 Gly Ala Asn Tyr Tyr Tyr Gln Cys Tyr Phe Ser Lys Lys Thr Asn Asp
 393 115 120 125
 396 Ile Asn Ser His Gln Thr Asp Lys Arg Lys Thr Cys Met Tyr Gly Gly
 397 130 135 140
 400 Val Thr Glu His Asn Gly Asn Gln Leu Asp Lys Tyr Arg Ser Ile Thr
 401 145 150 155 160
 404 Val Arg Val Phe Glu Asp Gly Lys Asn Leu Leu Ser Phe Asp Val Gln
 405 165 170 175
 408 Thr Asn Lys Lys Lys Val Thr Ala Gln Glu Leu Asp Tyr Leu Thr Arg
 409 180 185 190
 412 His Tyr Leu Val Lys Asn Lys Lys Leu Tyr Glu Phe Asn Asn Ser Pro
 413 195 200 205
 416 Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Glu Asn Ser Phe Trp
 417 210 215 220
 420 Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe Asp Gln Ser Lys Tyr
 421 225 230 235 240
 424 Leu Met Met Tyr Asn Asp Asn Lys Met Val Asp Ser Lys Asp Val Lys
 425 245 250 255
 428 Ile Glu Val Tyr Leu Thr Thr Lys Lys Lys
 429 260 265

515 <210> SEQ ID NO: 12 <211> 266 <212> PRT <213> Staphylococcus aureus <400> 12

W--> 517 <211> LENGTH:

W--> 517 <212> TYPE:

W--> 517 <213> ORGANISM:

E--> 517 <400> SEQUENCE:

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

517 Met Asn Lys Ser Arg Phe Ile Ser Cys Val Ile Leu Ile Phe Ala Leu
518 1 5 10 15
521 Ile Leu Val Leu Phe Thr Pro Asn Val Leu Ala Glu Ser Gln Pro Asp
522 20 25 30
525 Pro Thr Pro Asp Glu Leu His Lys Ala Ser Lys Phe Thr Gly Leu Met
526 35 40 45
529 Glu Asn Met Lys Val Leu Tyr Asp Asp His Tyr Val Ser Ala Thr Lys
530 50 55 60
533 Val Lys Ser Val Asp Lys Phe Leu Ala His Asp Leu Ile Tyr Asn Ile
534 65 70 75 80
537 Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val Lys Thr Glu Leu Leu
538 85 90 95
541 Asn Glu Gly Leu Ala Lys Lys Tyr Lys Asp Glu Val Val Asp Val Tyr
542 100 105 110
545 Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser Ser Lys Asp Asn Val
546 115 120 125
549 Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr Gly Gly Ile Thr Lys
550 130 135 140
553 His Glu Gly Asn His Phe Asp Asn Gly Asn Leu Gln Asn Val Leu Ile
554 145 150 155 160
557 Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser Phe Glu Val Gln Thr
558 165 170 175
561 Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp Ile Lys Ala Arg Asn
562 180 185 190
565 Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe Asn Ser Ser Pro Tyr
566 195 200 205
569 Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn Gly Asn Thr Phe Trp
570 210 215 220
573 Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe Asp Gln Ser Lys Tyr
574 225 230 235 240
577 Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp Ser Lys Ser Val Lys
578 245 250 255
581 Ile Glu Val His Leu Thr Thr Lys Asn Gly
582 260 265

```

670 <210> SEQ ID NO: 14 <211> 258 <212> PRT <213> Staphylococcus aureus <400> 14

W--> 672 <211> LENGTH:

W--> 672 <212> TYPE:

W--> 672 <213> ORGANISM:

E--> 672 <400> SEQUENCE:

Same

```

672 Met Lys Lys Phe Asn Ile Leu Ile Ala Leu Leu Phe Phe Thr Ser Leu
673 1 5 10 15
676 Val Ile Ser Pro Leu Asn Val Lys Ala Asn Glu Asn Ile Asp Ser Val
677 20 25 30
680 Lys Glu Lys Glu Leu His Lys Lys Ser Glu Leu Ser Ser Thr Ala Leu
681 35 40 45
684 Asn Asn Met Lys His Ser Tyr Ala Asp Lys Asn Pro Ile Ile Gly Glu
685 50 55 60
688 Asn Lys Ser Thr Gly Asp Gln Phe Leu Glu Asn Thr Leu Leu Tyr Lys
689 65 70 75 80

```

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DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

692 Lys Phe Phe Thr Asp Leu Ile Asn Phe Glu Asp Leu Leu Ile Asn Phe
693      85      90      95
696 Asn Ser Lys Glu Met Ala Gln His Phe Lys Ser Lys Asn Val Asp Val
697      100     105     110
700 Tyr Pro Ile Arg Tyr Ser Ile Asn Cys Tyr Gly Gly Glu Ile Asp Arg
701      115     120     125
704 Thr Ala Cys Thr Tyr Gly Gly Val Thr Pro His Glu Gly Asn Lys Leu
705      130     135     140
708 Lys Glu Arg Lys Lys Ile Pro Ile Asn Leu Trp Ile Asn Gly Val Gln
709 145      150     155     160
712 Lys Glu Val Ser Leu Asp Lys Val Gln Thr Asp Lys Lys Asn Val Thr
713      165     170     175
716 Val Gln Glu Leu Asp Ala Gln Ala Arg Arg Tyr Leu Gln Lys Asp Leu
717      180     185     190
720 Lys Leu Tyr Asn Asn Asp Thr Leu Gly Gly Lys Ile Gln Arg Gly Lys
721      195     200     205
724 Ile Glu Phe Asp Ser Ser Asp Gly Ser Lys Val Ser Tyr Asp Leu Phe
725      210     215     220
728 Asp Val Lys Gly Asp Phe Pro Glu Lys Gln Leu Arg Ile Tyr Ser Asp
729 225      230     235     240
732 Asn Lys Thr Leu Ser Thr Glu His Leu His Ile Asp Ile Tyr Leu Tyr
733      245     250     255
736 Glu Lys

```

809 <210> SEQ ID NO: 16 <211> 248 <212> PRT <213> Staphylococcus aureus <400> 16

W--> 811 <211> LENGTH:

W--> 811 <212> TYPE:

W--> 811 <213> ORGANISM:

E--> 811 <400> SEQUENCE:

Same

```

811 Met Lys Lys Thr Ala Phe Ile Leu Leu Leu Phe Ile Ala Leu Thr Leu
812 1      5      10      15
815 Thr Thr Ser Pro Leu Val Asn Gly Ser Glu Lys Ser Glu Glu Ile Asn
816      20      25      30
819 Glu Lys Asp Leu Arg Lys Lys Ser Glu Leu Gln Arg Asn Ala Leu Ser
820      35      40      45
823 Asn Leu Arg Gln Ile Tyr Tyr Asn Glu Lys Ala Ile Thr Glu Asn
824      50      55      60
827 Lys Glu Ser Asp Asp Gln Phe Leu Glu Asn Thr Leu Leu Phe Lys Gly
828 65      70      75      80
831 Phe Phe Thr Gly His Pro Trp Tyr Asn Asp Leu Leu Val Asp Leu Gly
832      85      90      95
835 Ser Lys Asp Ala Thr Asn Lys Tyr Lys Gly Lys Lys Val Asp Leu Tyr
836      100     105     110
839 Gly Ala Tyr Tyr Gly Tyr Gln Cys Ala Gly Gly Thr Pro Asn Lys Thr
840      115     120     125
843 Ala Cys Met Tyr Gly Gly Val Thr Leu His Asp Asn Asn Arg Leu Thr
844      130     135     140
847 Glu Glu Lys Lys Val Pro Ile Asn Leu Trp Ile Asp Gly Lys Gln Thr
848 145      150     155     160
851 Thr Val Pro Ile Asp Lys Val Lys Thr Ser Lys Lys Glu Val Thr Val

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RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

852                165                170                175
855 Gln Glu Leu Asp Leu Gln Ala Arg His Tyr Leu His Gly Lys Phe Gly
856                180                185                190
859 Leu Tyr Asn Ser Asp Ser Phe Gly Gly Lys Val Gln Arg Gly Leu Ile
860                195                200                205
863 Val Phe His Ser Ser Glu Gly Ser Thr Val Ser Tyr Asp Leu Phe Asp
864                210                215                220
867 Ala Gln Gly Gln Tyr Pro Asp Thr Leu Leu Arg Ile Tyr Arg Asp Asn
868 225                230                235                240
871 Lys Thr Ile Asn Ser Glu Asn Leu

```

```

872                245
942 <210> SEQ ID NO: 18 <211> 234 <212> PRT <213> Staphylococcus aureus <400> 18

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W--> 944 <211> LENGTH:

W--> 944 <212> TYPE:

W--> 944 <213> ORGANISM:

E--> 944 <400> SEQUENCE:

same

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944 Met Asn Lys Lys Leu Leu Met Asn Phe Phe Ile Val Ser Pro Leu Leu
945 1                5                10                15
948 Leu Ala Thr Thr Ala Thr Asp Phe Thr Pro Val Pro Leu Ser Ser Asn
949                20                25                30
952 Gln Ile Ile Lys Thr Ala Lys Ala Ser Thr Asn Asp Asn Ile Lys Asp
953                35                40                45
956 Leu Leu Asp Trp Tyr Ser Ser Gly Ser Asp Thr Phe Thr Asn Ser Glu
957                50                55                60
960 Val Leu Asp Asn Ser Leu Gly Ser Met Arg Ile Lys Asn Thr Asp Gly
961 65                70                75                80
964 Ser Ile Ser Leu Ile Ile Phe Pro Ser Pro Tyr Tyr Ser Pro Ala Phe
965                85                90                95
968 Thr Lys Gly Glu Lys Val Asp Leu Asn Thr Lys Arg Thr Lys Lys Ser
969                100               105               110
972 Gln His Thr Ser Glu Gly Thr Tyr Ile His Phe Gln Ile Ser Gly Val
973                115               120               125
976 Thr Asn Thr Glu Lys Leu Pro Thr Pro Ile Glu Leu Pro Leu Lys Val
977                130               135               140
980 Lys Val His Gly Lys Asp Ser Pro Leu Lys Tyr Gly Pro Lys Phe Asp
981 145               150               155               160
984 Lys Lys Gln Leu Ala Ile Ser Thr Leu Asp Phe Glu Ile Arg His Gln
985                165               170               175
988 Leu Thr Gln Ile His Gly Leu Tyr Arg Ser Ser Asp Lys Thr Gly Gly
989                180               185               190
992 Tyr Trp Lys Ile Thr Met Asn Asp Gly Ser Thr Tyr Gln Ser Asp Leu
993                195               200               205
996 Ser Lys Lys Phe Glu Tyr Asn Thr Glu Lys Pro Pro Ile Asn Ile Asp
997                210               215               220
1000 Glu Ile Lys Thr Ile Glu Ala Glu Ile Asn

```

```

1001 225                230
1083 <210> SEQ ID NO: 20 <211> 250 <212> PRT <213> Streptococcus pyogenes <400> 20

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W--> 1085 <211> LENGTH:

W--> 1085 <212> TYPE:

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

W--> 1085 <213> ORGANISM:

E--> 1085 <400> SEQUENCE:

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1085 Met Glu Asn Asn Lys Glu Val Leu Lys Lys Met Val Phe Phe Val Leu
1086 1 5 10 15
1089 Met Lys Phe Leu Gly Leu Thr Ile Leu Pro Lys Gly Ile Cys Ser Thr
1090 20 25 30
1093 Arg Pro Lys Pro Ser Gln Leu Gln Arg Ser Asn Leu Val Lys Thr Phe
1094 35 40 45
1097 Lys Ile Tyr Ile Phe Phe Met Arg Val Thr Leu Val Thr His Glu Asn
1098 50 55 60
1101 Val Lys Ser Val Asp Gln Leu Leu Ser His Asp Leu Ile Tyr Asn Val
1102 65 70 75 80
1105 Ser Gly Pro Asn Tyr Asp Lys Leu Lys Thr Glu Leu Lys Asn Gln Glu
1106 85 90 95
1109 Met Ala Thr Leu Phe Lys Asp Lys Asn Val Asp Ile Tyr Gly Val Glu
1110 100 105 110
1113 Tyr Tyr His Leu Cys Tyr Leu Cys Glu Asn Ala Glu Arg Ser Ala Cys
1114 115 120 125
1117 Leu Tyr Gly Gly Val Thr Asn His Glu Gly Asn His Leu Glu Ile Pro
1118 130 135 140
1121 Lys Lys Ile Val Val Lys Val Ser Ile Asp Gly Ile Gln Ser Leu Ser
1122 145 150 155 160
1125 Phe Asp Ile Glu Gln Ile Lys Asn Gly Asn Cys Ser Arg Ile Ser Tyr
1126 165 170 175
1129 Thr Val Arg Lys Tyr Leu Thr Asp Asn Lys Gln Leu Tyr Thr Asn Gly
1130 180 185 190
1133 Pro Ser Lys Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Pro Lys Asn Lys
1134 195 200 205
1137 Glu Ser Phe Trp Phe Asp Phe Phe Pro Glu Pro Glu Phe Thr Gln Ser
1138 210 215 220
1141 Lys Tyr Leu Met Ile Tyr Lys Asp Asn Glu Thr Leu Asp Ser Asn Thr
1142 225 230 235 240
1145 Ser Gln Ile Glu Val Tyr Leu Thr Thr Lys
1146 245 250

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1294 <210> SEQ ID NO: 28 <211> 319 <212> PRT <213> Escherichia coli <400> 28

W--> 1296 <211> LENGTH:

W--> 1296 <212> TYPE:

W--> 1296 <213> ORGANISM:

E--> 1296 <400> SEQUENCE:

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1296 Met Lys Cys Ile Leu Phe Lys Trp Val Leu Cys Leu Leu Leu Gly Phe
1297 1 5 10 15
1300 Ser Ser Val Ser Tyr Ser Arg Glu Phe Thr Ile Asp Phe Ser Thr Gln
1301 20 25 30
1304 Gln Ser Tyr Val Ser Ser Leu Asn Ser Ile Arg Thr Glu Ile Ser Thr
1305 35 40 45
1308 Pro Leu Glu His Ile Ser Gln Gly Thr Thr Ser Val Ser Val Ile Asn
1309 50 55 60
1312 His Thr Pro Pro Gly Ser Tyr Phe Ala Val Asp Ile Arg Gly Leu Asp
1313 65 70 75 80

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

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1316 Val Tyr Gln Ala Arg Phe Asp His Leu Arg Leu Ile Ile Glu Gln Asn
1317                               85                               90                               95
1320 Asn Leu Tyr Val Ala Gly Phe Val Asn Thr Ala Thr Asn Thr Phe Tyr
1321                               100                              105                              110
1324 Arg Phe Ser Asp Phe Thr His Ile Ser Val Pro Gly Val Thr Thr Val
1325                               115                              120                              125
1328 Ser Met Thr Thr Asp Ser Ser Tyr Thr Thr Leu Gln Arg Val Ala Ala
1329                               130                              135                              140
1332 Leu Glu Arg Ser Gly Met Gln Ile Ser Arg His Ser Leu Val Ser Ser
1333 145                               150                              155                              160
1336 Tyr Leu Ala Leu Met Glu Phe Ser Gly Asn Thr Met Thr Arg Asp Ala
1337                               165                              170                              175
1340 Ser Arg Ala Val Leu Arg Phe Val Thr Val Thr Ala Glu Ala Leu Arg
1341                               180                              185                              190
1344 Phe Arg Gln Ile Gln Arg Glu Phe Arg Gln Ala Leu Ser Glu Thr Ala
1345                               195                              200                              205
1348 Pro Val Tyr Thr Met Thr Pro Gly Asp Val Asp Leu Thr Leu Asn Trp
1349                               210                              215                              220
1352 Gly Arg Ile Ser Asn Val Leu Pro Glu Tyr Arg Gly Glu Asp Gly Val
1353 225                               230                              235                              240
1356 Arg Val Gly Arg Ile Ser Phe Asn Asn Ile Ser Ala Ile Leu Gly Thr
1357                               245                              250                              255
1360 Val Ala Val Ile Leu Asn Cys His His Gln Gly Ala Arg Ser Val Arg
1361                               260                              265                              270
1364 Ala Val Asn Glu Glu Ser Gln Pro Glu Cys Gln Ile Thr Gly Asp Arg
1365                               275                              280                              285
1368 Pro Val Ile Lys Ile Asn Asn Thr Leu Trp Glu Ser Asn Thr Ala Ala
1369                               290                              295                              300
1372 Ala Phe Leu Asn Arg Lys Ser Gln Phe Leu Tyr Thr Thr Gly Lys
1373 305                               310                              315
1376 <210> SEQ ID NO: 29 <211> 4 <212> PRT <213> Mus musculus <400> 29

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W--> 1378 <211> LENGTH:

W--> 1378 <212> TYPE:

W--> 1378 <213> ORGANISM:

E--> 1378 <400> SEQUENCE:

1378 Tyr Gln Thr Ile

1379 1

1683 <210> SEQ ID NO: 33 <211> 986 <212> PRT <213> Yersinia pseudotuberculosis <400> 33

W--> 1685 <211> LENGTH:

W--> 1685 <212> TYPE:

W--> 1685 <213> ORGANISM:

E--> 1685 <400> SEQUENCE:

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1685 Met Met Val Phe Gln Pro Ile Ser Glu Phe Leu Leu Ile Arg Asn Ala
1686 1                               5                               10                               15
1689 Gly Met Ser Met Tyr Phe Asn Lys Ile Ile Ser Phe Asn Ile Ile Ser
1690                               20                               25                               30
1693 Arg Ile Val Ile Cys Ile Phe Leu Ile Cys Gly Met Phe Met Ala Gly
1694                               35                               40                               45
1697 Ala Ser Glu Lys Tyr Asp Ala Asn Ala Pro Gln Gln Val Gln Pro Tyr

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Same

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

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Output Set: N:\CRF3\03152002\I751708.raw

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1698      50              55              60
1701 Ser Val Ser Ser Ser Ala Phe Glu Asn Leu His Pro Asn Asn Glu Met
1702 65              70              75              80
1705 Glu Ser Ser Ile Asn Pro Phe Ser Ala Ser Asp Thr Glu Arg Asn Ala
1706              85              90              95
1709 Ala Ile Ile Asp Arg Ala Asn Lys Glu Gln Glu Thr Glu Ala Val Asn
1710              100             105             110
1713 Lys Met Ile Ser Thr Gly Ala Arg Leu Ala Ala Ser Gly Arg Ala Ser
1714              115             120             125
1717 Asp Val Ala His Ser Met Val Gly Asp Ala Val Asn Gln Glu Ile Lys
1718              130             135             140
1721 Gln Trp Leu Asn Arg Phe Gly Thr Ala Gln Val Asn Leu Asn Phe Asp
1722 145             150             155             160
1725 Lys Asn Phe Ser Leu Lys Glu Ser Ser Leu Asp Trp Leu Ala Pro Trp
1726              165             170             175
1729 Tyr Asp Ser Ala Ser Phe Leu Phe Phe Ser Gln Leu Gly Ile Arg Asn
1730              180             185             190
1733 Lys Asp Ser Arg Asn Thr Leu Asn Leu Gly Val Gly Ile Arg Thr Leu
1734              195             200             205
1737 Glu Asn Gly Trp Leu Tyr Gly Leu Asn Thr Phe Tyr Asp Asn Asp Leu
1738              210             215             220
1741 Thr Gly His Asn His Arg Ile Gly Leu Gly Ala Glu Ala Trp Thr Asp
1742 225             230             235             240
1745 Tyr Leu Gln Leu Ala Ala Asn Gly Tyr Phe Arg Leu Asn Gly Trp His
1746              245             250             255
1749 Ser Ser Arg Asp Phe Ser Asp Tyr Lys Glu Arg Pro Ala Thr Gly Gly
1750              260             265             270
1753 Asp Leu Arg Ala Asn Ala Tyr Leu Pro Ala Leu Pro Gln Leu Gly Gly
1754              275             280             285
1757 Lys Leu Met Tyr Glu Gln Tyr Thr Gly Glu Arg Val Ala Leu Phe Gly
1758              290             295             300
1761 Lys Asp Asn Leu Gln Arg Asn Pro Tyr Ala Val Thr Ala Gly Ile Asn
1762 305             310             315             320
1765 Tyr Thr Pro Val Pro Leu Leu Thr Val Gly Val Asp Gln Arg Met Gly
1766              325             330             335
1769 Lys Ser Ser Lys His Glu Thr Gln Trp Asn Leu Gln Met Asn Tyr Arg
1770              340             345             350
1773 Leu Gly Glu Ser Phe Gln Ser Gln Leu Ser Pro Ser Ala Val Ala Gly
1774              355             360             365
1777 Thr Arg Leu Leu Ala Glu Ser Arg Tyr Asn Leu Val Asp Arg Asn Asn
1778              370             375             380
1781 Asn Ile Val Leu Glu Tyr Gln Lys Gln Gln Val Val Lys Leu Thr Leu
1782 385             390             395             400
1785 Ser Pro Ala Thr Ile Ser Gly Leu Pro Gly Gln Val Tyr Gln Val Asn
1786              405             410             415
1789 Ala Gln Val Gln Gly Ala Ser Ala Val Arg Glu Ile Val Trp Ser Asp
1790              420             425             430
1793 Ala Glu Leu Ile Ala Ala Gly Gly Thr Leu Thr Pro Leu Ser Thr Thr
1794              435             440             445

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

1797 Gln Phe Asn Leu Val Leu Pro Pro Tyr Lys Arg Thr Ala Gln Val Ser
1798      450      455      460
1801 Arg Val Thr Asp Asp Leu Thr Ala Asn Phe Tyr Ser Leu Ser Ala Leu
1802 465      470      475      480
1805 Ala Val Asp His Gln Gly Asn Arg Ser Asn Ser Phe Thr Leu Ser Val
1806      485      490      495
1809 Thr Val Gln Gln Pro Gln Leu Thr Leu Thr Ala Ala Val Ile Gly Asp
1810      500      505      510
1813 Gly Ala Pro Ala Asn Gly Lys Thr Ala Ile Thr Val Glu Phe Thr Val
1814      515      520      525
1817 Ala Asp Phe Glu Gly Lys Pro Leu Ala Gly Gln Glu Val Val Ile Thr
1818      530      535      540
1821 Thr Asn Asn Gly Ala Leu Pro Asn Lys Ile Thr Glu Lys Thr Asp Ala
1822 545      550      555      560
1825 Asn Gly Val Ala Arg Ile Ala Leu Thr Asn Thr Thr Asp Gly Val Thr
1826      565      570      575
1829 Val Val Thr Ala Glu Val Glu Gly Gln Arg Gln Ser Val Asp Thr His
1830      580      585      590
1833 Phe Val Lys Gly Thr Ile Ala Ala Asp Lys Ser Thr Leu Ala Ala Val
1834      595      600      605
1837 Pro Thr Ser Ile Ile Ala Asp Gly Leu Met Ala Ser Thr Ile Thr Leu
1838      610      615      620
1841 Glu Leu Lys Asp Thr Tyr Gly Asp Pro Gln Ala Gly Ala Asn Val Ala
1842 625      630      635      640
1845 Phe Asp Thr Thr Leu Gly Asn Met Gly Val Ile Thr Asp His Asn Asp
1846      645      650      655
1849 Gly Thr Tyr Ser Ala Pro Leu Thr Ser Thr Thr Leu Gly Val Ala Thr
1850      660      665      670
1853 Val Thr Val Lys Val Asp Gly Ala Ala Phe Ser Val Pro Ser Val Thr
1854      675      680      685
1857 Val Asn Phe Thr Ala Asp Pro Ile Pro Asp Ala Gly Arg Ser Ser Phe
1858      690      695      700
1861 Thr Val Ser Thr Pro Asp Ile Leu Ala Asp Gly Thr Met Ser Ser Thr
1862 705      710      715      720
1865 Leu Ser Phe Val Pro Val Asp Lys Asn Gly His Phe Ile Ser Gly Met
1866      725      730      735
1869 Gln Gly Leu Ser Phe Thr Gln Asn Gly Val Pro Val Ser Ile Ser Pro
1870      740      745      750
1873 Ile Thr Glu Gln Pro Asp Ser Tyr Thr Ala Thr Val Val Gly Asn Ser
1874      755      760      765
1877 Val Gly Asp Val Thr Ile Thr Pro Gln Val Asp Thr Leu Ile Leu Ser
1878      770      775      780
1881 Thr Leu Gln Lys Lys Ile Ser Leu Phe Pro Val Pro Thr Leu Thr Gly
1882 785      790      795      800
1885 Ile Leu Val Asn Gly Gln Asn Phe Ala Thr Asp Lys Gly Phe Pro Lys
1886      805      810      815
1889 Thr Ile Phe Lys Asn Ala Thr Phe Gln Leu Gln Met Asp Asn Asp Val
1890      820      825      830
1893 Ala Asn Asn Thr Gln Tyr Glu Trp Ser Ser Ser Phe Thr Pro Asn Val

```

RAW SEQUENCE LISTING

DATE: 03/15/2002

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TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

1894      835      840      845
1897 Ser Val Asn Asp Gln Gly Gln Val Thr Ile Thr Tyr Gln Thr Tyr Ser
1898      850      855      860
1901 Glu Val Ala Val Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Ser Val
1902 865      870      875      880
1905 Ser Tyr Arg Phe Tyr Pro Asn Arg Trp Ile Tyr Asp Gly Gly Arg Ser
1906      885      890      895
1909 Leu Val Ser Ser Leu Glu Ala Ser Arg Gln Cys Gln Gly Ser Asp Met
1910      900      905      910
1913 Ser Ala Val Leu Glu Ser Ser Arg Ala Thr Asn Gly Thr Arg Ala Pro
1914      915      920      925
1917 Asp Gly Thr Leu Trp Gly Glu Trp Gly Ser Leu Thr Ala Tyr Ser Ser
1918      930      935      940
1921 Asp Trp Gln Ser Gly Glu Tyr Trp Val Lys Lys Thr Ser Thr Asp Phe
1922 945      950      955      960
1925 Glu Thr Met Asn Met Asp Thr Gly Ala Leu Gln Pro Gly Pro Ala Tyr
1926      965      970      975
1929 Leu Ala Phe Pro Leu Cys Ala Leu Ser Ile

```

```

1930      980      985
2011 <210> SEQ ID NO: 36 <211> 174 <212> PRT <213> Neisseria meningitidis <400> 36

```

W--> 2013 <211> LENGTH:

W--> 2013 <212> TYPE:

W--> 2013 <213> ORGANISM:

E--> 2013 <400> SEQUENCE:

```

2013 Met Lys Lys Ala Leu Ala Thr Leu Ile Ala Leu Ala Leu Pro Ala Ala
2014 1      5      10      15
2017 Ala Leu Ala Glu Gly Ala Ser Gly Phe Tyr Val Gln Ala Asp Ala Ala
2018      20      25      30
2021 His Ala Lys Ala Ser Ser Ser Leu Gly Ser Ala Lys Gly Phe Ser Pro
2022      35      40      45
2025 Arg Ile Ser Ala Gly Tyr Arg Ile Asn Asp Leu Arg Phe Ala Val Asp
2026      50      55      60
2029 Tyr Thr Arg Tyr Lys Asn Tyr Lys Ala Pro Ser Thr Asp Phe Lys Leu
2030 65      70      75      80
2033 Tyr Ser Ile Gly Ala Ser Ala Ile Tyr Asp Phe Asp Thr Gln Ser Pro
2034      85      90      95
2037 Val Lys Pro Tyr Leu Gly Ala Arg Leu Ser Leu Asn Arg Ala Ser Val
2038      100     105     110
2041 Asp Leu Gly Gly Ser Asp Ser Phe Ser Gln Thr Ser Ile Gly Leu Gly
2042      115     120     125
2045 Val Leu Thr Gly Val Ser Tyr Ala Val Thr Pro Asn Val Asp Leu Asp
2046      130     135     140
2049 Ala Gly Tyr Arg Tyr Asn Tyr Ile Gly Lys Val Asn Thr Val Lys Asn
2050 145     150     155     160
2053 Val Arg Ser Gly Glu Leu Ser Val Gly Val Arg Val Lys Phe
2054      165     170

```

```

2057 <210> SEQ ID NO: 37 <211> 352 <212> PRT <213> Homo sapiens <400> 37

```

W--> 2059 <211> LENGTH:

W--> 2059 <212> TYPE:

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

W--> 2059 <213> ORGANISM:

E--> 2059 <400> SEQUENCE:

```

2059 Met Glu Gly Ile Ser Ile Tyr Thr Ser Asp Asn Tyr Thr Glu Glu Met
2060 1 5 10 15
2063 Gly Ser Gly Asp Tyr Asp Ser Met Lys Glu Pro Cys Phe Arg Glu Glu
2064 20 25 30
2067 Asn Ala Asn Phe Asn Lys Ile Phe Leu Pro Thr Ile Tyr Ser Ile Ile
2068 35 40 45
2071 Phe Leu Thr Gly Ile Val Gly Asn Gly Leu Val Ile Leu Val Met Gly
2072 50 55 60
2075 Tyr Gln Lys Lys Leu Arg Ser Met Thr Asp Lys Tyr Arg Leu His Leu
2076 65 70 75 80
2079 Ser Val Ala Asp Leu Leu Phe Val Ile Thr Leu Pro Phe Trp Ala Val
2080 85 90 95
2083 Asp Ala Val Ala Asn Trp Tyr Phe Gly Asn Phe Leu Cys Lys Ala Val
2084 100 105 110
2087 His Val Ile Tyr Thr Val Asn Leu Tyr Ser Ser Val Leu Ile Leu Ala
2088 115 120 125
2091 Phe Ile Ser Leu Asp Arg Tyr Leu Ala Ile Val His Ala Thr Asn Ser
2092 130 135 140
2095 Gln Arg Pro Arg Lys Leu Leu Ala Glu Lys Val Val Tyr Val Gly Val
2096 145 150 155 160
2099 Trp Ile Pro Ala Leu Leu Leu Thr Ile Pro Asp Phe Ile Phe Ala Asn
2100 165 170 175
2103 Val Ser Glu Ala Asp Asp Arg Tyr Ile Cys Asp Arg Phe Tyr Pro Asn
2104 180 185 190
2107 Asp Leu Trp Val Val Val Phe Gln Phe Gln His Ile Met Val Gly Leu
2108 195 200 205
2111 Ile Leu Pro Gly Ile Val Ile Leu Ser Cys Tyr Cys Ile Ile Ile Ser
2112 210 215 220
2115 Lys Leu Ser His Ser Lys Gly His Gln Lys Arg Lys Ala Leu Lys Thr
2116 225 230 235 240
2119 Thr Ile Ile Pro Ile Leu Ala Phe Phe Ala Cys Trp Leu Pro Tyr Tyr
2120 245 250 255
2123 Ile Gly Ile Ser Ile Asp Ser Phe Ile Leu Leu Glu Ile Ile Lys Gln
2124 260 265 270
2127 Gly Cys Glu Phe Glu Asn Thr Val His Lys Trp Ile Ser Ile Thr Glu
2128 275 280 285
2131 Ala Leu Ala Phe Phe His Cys Cys Leu Asn Pro Ile Leu Tyr Ala Phe
2132 290 295 300
2135 Leu Gly Ala Lys Phe Lys Thr Ser Ala Gln His Ala Leu Thr Ser Val
2136 305 310 315 320
2139 Ser Arg Gly Ser Ser Leu Lys Ile Leu Ser Lys Gly Lys Arg Gly Gly
2140 325 330 335
2143 His Ser Ser Val Ser Thr Glu Ser Glu Ser Ser Ser Phe His Ser Ser
2144 340 345 350

```

2208 <210> SEQ ID NO: 39 <211> 209 <212> PRT <213> Homo sapiens <400> 39

W--> 2210 <211> LENGTH:

W--> 2210 <212> TYPE:

same

RAW SEQUENCE LISTING

DATE: 03/15/2002

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

W--> 2210 <213> ORGANISM:

E--> 2210 <400> SEQUENCE:

```

2210 Met Leu Arg Ala Gly Glu Val His Thr Gly Thr Thr Ile Met Ala Val
2211 1      5      10      15
2214 Glu Phe Asp Gly Gly Val Val Met Gly Ser Asp Ser Arg Val Ser Ala
2215      20      25      30
2218 Gly Glu Ala Val Val Asn Arg Val Phe Asp Lys Leu Ser Pro Leu His
2219      35      40      45
2222 Glu Arg Ile Tyr Cys Ala Leu Ser Gly Ser Ala Ala Asp Ala Gln Ala
2223      50      55      60
2226 Val Ala Asp Met Ala Ala Tyr Gln Leu Glu Leu His Gly Ile Glu Leu
2227 65      70      75      80
2230 Glu Glu Pro Pro Leu Val Leu Ala Ala Ala Asn Val Val Arg Asn Ile
2231      85      90      95
2234 Ser Tyr Lys Tyr Arg Glu Asp Leu Ser Ala His Leu Met Val Ala Gly
2235      100     105     110
2238 Trp Asp Gln Arg Glu Gly Gly Gln Val Tyr Gly Thr Leu Gly Gly Met
2239      115     120     125
2242 Leu Thr Arg Gln Pro Phe Ala Ile Gly Gly Ser Gly Ser Thr Phe Ile
2243      130     135     140
2246 Tyr Gly Tyr Val Asp Ala Ala Tyr Lys Pro Gly Met Ser Pro Glu Glu
2247 145     150     155     160
2250 Cys Arg Arg Phe Thr Thr Asp Ala Ile Ala Leu Ala Met Ser Arg Asp
2251      165     170     175
2254 Gly Ser Ser Gly Gly Val Ile Tyr Leu Val Thr Ile Thr Ala Ala Gly
2255      180     185     190
2258 Val Asp His Arg Val Ile Leu Gly Asn Glu Leu Pro Lys Phe Tyr Asp
2259      195     200     205
2262 Glu

```

2459 <210> SEQ ID NO: 41 <211> 748 <212> PRT <213> Homo sapiens <400> 41

W--> 2461 <211> LENGTH:

W--> 2461 <212> TYPE:

W--> 2461 <213> ORGANISM:

E--> 2461 <400> SEQUENCE:

```

2461 Met Ala Ser Ser Arg Cys Pro Ala Pro Arg Gly Cys Arg Cys Leu Pro
2462 1      5      10      15
2465 Gly Ala Ser Leu Ala Trp Leu Gly Thr Val Leu Leu Leu Leu Ala Asp
2466      20      25      30
2469 Trp Val Leu Leu Arg Thr Ala Leu Pro Arg Ile Phe Ser Leu Leu Val
2470      35      40      45
2473 Pro Thr Ala Leu Pro Leu Leu Arg Val Trp Ala Val Gly Leu Ser Arg
2474      50      55      60
2477 Trp Ala Val Leu Trp Leu Gly Ala Cys Gly Val Leu Arg Ala Thr Val
2478 65      70      75      80
2481 Gly Ser Lys Ser Glu Asn Ala Gly Ala Gln Gly Trp Leu Ala Ala Leu
2482      85      90      95
2485 Lys Pro Leu Ala Ala Ala Leu Gly Leu Ala Leu Pro Gly Leu Ala Leu
2486      100     105     110
2489 Phe Arg Glu Leu Ile Ser Trp Gly Ala Pro Gly Ser Ala Asp Ser Thr

```

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

2490          115          120          125
2493 Arg Leu Leu His Trp Gly Ser His Pro Thr Ala Phe Val Val Ser Tyr
2494          130          135          140
2497 Ala Ala Ala Leu Pro Ala Ala Ala Leu Trp His Lys Leu Gly Ser Leu
2498 145          150          155          160
2501 Trp Val Pro Gly Gly Gln Gly Gly Ser Gly Asn Pro Val Arg Arg Leu
2502          165          170          175
2505 Leu Gly Cys Leu Gly Ser Glu Thr Arg Arg Leu Ser Leu Phe Leu Val
2506          180          185          190
2509 Leu Val Val Leu Ser Ser Leu Gly Glu Met Ala Ile Pro Phe Phe Thr
2510          195          200          205
2513 Gly Arg Leu Thr Asp Trp Ile Leu Gln Asp Gly Ser Ala Asp Thr Phe
2514          210          215          220
2517 Thr Arg Asn Leu Thr Leu Met Ser Ile Leu Thr Ile Ala Ser Ala Val
2518 225          230          235          240
2521 Leu Glu Phe Val Gly Asp Gly Ile Tyr Asn Asn Thr Met Gly His Val
2522          245          250          255
2525 His Ser His Leu Gln Gly Glu Val Phe Gly Ala Val Leu Arg Gln Glu
2526          260          265          270
2529 Thr Glu Phe Phe Gln Gln Asn Gln Thr Gly Asn Ile Met Ser Arg Val
2530          275          280          285
2533 Thr Glu Asp Thr Ser Thr Leu Ser Asp Ser Leu Ser Glu Asn Leu Ser
2534          290          295          300
2537 Leu Phe Leu Trp Tyr Leu Val Arg Gly Leu Cys Leu Leu Gly Ile Met
2538 305          310          315          320
2541 Leu Trp Gly Ser Val Ser Leu Thr Met Val Thr Leu Val Thr Leu Pro
2542          325          330          335
2545 Leu Leu Phe Leu Leu Pro Lys Lys Val Gly Lys Trp Tyr Gln Leu Leu
2546          340          345          350
2549 Glu Val Gln Val Arg Glu Ser Leu Ala Lys Ser Ser Gln Val Ala Ile
2550          355          360          365
2553 Glu Ala Leu Ser Ala Met Pro Thr Val Arg Ser Phe Ala Asn Glu Glu
2554          370          375          380
2557 Gly Glu Ala Gln Lys Phe Arg Glu Lys Leu Gln Glu Ile Lys Thr Leu
2558 385          390          395          400
2561 Asn Gln Lys Glu Ala Val Ala Tyr Ala Val Asn Ser Trp Thr Thr Ser
2562          405          410          415
2565 Ile Ser Gly Met Leu Leu Lys Val Gly Ile Leu Tyr Ile Gly Gly Gln
2566          420          425          430
2569 Leu Val Thr Ser Gly Ala Val Ser Ser Gly Asn Leu Val Thr Phe Val
2570          435          440          445
2573 Leu Tyr Gln Met Gln Phe Thr Gln Ala Leu Glu Val Leu Leu Ser Ile
2574          450          455          460
2577 Tyr Pro Arg Val Gln Lys Ala Val Gly Ser Ser Glu Lys Ile Phe Glu
2578 465          470          475          480
2581 Tyr Leu Asp Arg Thr Pro Arg Cys Pro Pro Ser Gly Leu Leu Thr Pro
2582          485          490          495
2585 Leu His Leu Glu Gly Leu Val Gln Phe Gln Asp Val Ser Phe Ala Tyr
2586          500          505          510

```

RAW SEQUENCE LISTING

DATE: 03/15/2002

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

2589 Pro Asn Arg Pro Asp Val Leu Val Leu Gln Gly Leu Thr Phe Thr Leu
2590          515          520          525
2593 Arg Pro Gly Glu Val Thr Ala Leu Val Gly Pro Asn Gly Ser Gly Lys
2594          530          535          540
2597 Ser Thr Val Ala Ala Leu Leu Gln Asn Leu Tyr Gln Pro Thr Gly Gly
2598 545          550          555          560
2601 Gln Leu Leu Leu Asp Gly Lys Pro Leu Pro Gln Tyr Glu His Arg Tyr
2602          565          570          575
2605 Leu His Arg Gln Val Ala Ala Val Gly Gln Glu Pro Gln Val Phe Gly
2606          580          585          590
2609 Arg Ser Leu Gln Glu Asn Ile Ala Tyr Gly Leu Thr Gln Lys Pro Thr
2610          595          600          605
2613 Met Glu Glu Ile Thr Ala Ala Ala Val Lys Ser Gly Ala His Ser Phe
2614          610          615          620
2617 Ile Ser Gly Leu Pro Gln Gly Tyr Asp Thr Glu Val Gly Glu Ala Gly
2618 625          630          635          640
2621 Ser Gln Leu Ser Gly Gly Gln Gln Gln Ala Val Ala Leu Ala Arg Ala
2622          645          650          655
2625 Leu Ile Arg Lys Pro Cys Val Leu Ile Leu Asp Asp Ala Thr Ser Ala
2626          660          665          670
2629 Leu Asp Ala Asn Ser Gln Leu Gln Val Glu Gln Leu Leu Tyr Glu Ser
2630          675          680          685
2633 Pro Glu Arg Tyr Ser Arg Ser Val Leu Leu Ile Thr Gln His Leu Ser
2634          690          695          700
2637 Leu Val Glu Gln Ala Asp His Ile Leu Phe Leu Glu Gly Gly Ala Ile
2638 705          710          715          720
2641 Arg Glu Gly Gly Thr His Gln Gln Leu Met Glu Lys Lys Gly Cys Tyr
2642          725          730          735
2645 Trp Ala Met Val Gln Ala Pro Ala Asp Ala Pro Glu
2646          740          745

```

2822 <210> SEQ ID NO: 43 <211> 646 <212> PRT <213> Homo sapiens <400> 43

W--> 2824 <211> LENGTH:

W--> 2824 <212> TYPE:

W--> 2824 <213> ORGANISM:

E--> 2824 <400> SEQUENCE:

Same

```

2824 Met Ser Lys Gly Pro Ala Val Gly Ile Asp Leu Gly Thr Thr Tyr Ser
2825 1          5          10          15
2828 Cys Val Gly Val Phe Gln His Gly Lys Val Glu Ile Ile Ala Asn Asp
2829          20          25          30
2832 Gln Gly Asn Arg Thr Thr Pro Ser Tyr Val Ala Phe Thr Asp Thr Glu
2833          35          40          45
2836 Arg Leu Ile Gly Asp Ala Ala Lys Asn Gln Val Ala Met Asn Pro Thr
2837          50          55          60
2840 Asn Thr Val Phe Asp Ala Lys Arg Leu Ile Gly Arg Arg Phe Asp Asp
2841 65          70          75          80
2844 Ala Val Val Gln Ser Asp Met Lys His Trp Pro Phe Met Val Val Asn
2845          85          90          95
2848 Asp Ala Gly Arg Pro Lys Val Gln Val Glu Tyr Lys Gly Glu Thr Lys
2849          100          105          110

```

RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

2852 Ser Phe Tyr Pro Glu Glu Val Ser Ser Met Val Leu Thr Lys Met Lys
2853      115      120      125
2856 Glu Ile Ala Glu Ala Tyr Leu Gly Lys Thr Val Thr Asn Ala Val Val
2857      130      135      140
2860 Thr Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Gln Ala Thr Lys Asp
2861 145      150      155      160
2864 Ala Gly Thr Ile Ala Gly Leu Asn Val Leu Arg Ile Ile Asn Glu Pro
2865      165      170      175
2868 Thr Ala Ala Ala Ile Ala Tyr Gly Leu Asp Lys Lys Val Gly Ala Glu
2869      180      185      190
2872 Arg Asn Val Leu Ile Phe Asp Leu Gly Gly Gly Thr Phe Asp Val Ser
2873      195      200      205
2876 Ile Leu Thr Ile Glu Asp Gly Ile Phe Glu Val Lys Ser Thr Ala Gly
2877      210      215      220
2880 Asp Thr His Leu Gly Gly Glu Asp Phe Asp Asn Arg Met Val Asn His
2881 225      230      235      240
2884 Phe Ile Ala Glu Phe Lys Arg Lys His Lys Lys Asp Ile Ser Glu Asn
2885      245      250      255
2888 Lys Arg Ala Val Arg Arg Leu Arg Thr Ala Cys Glu Arg Ala Lys Arg
2889      260      265      270
2892 Thr Leu Ser Ser Ser Thr Gln Ala Ser Ile Glu Ile Asp Ser Leu Tyr
2893      275      280      285
2896 Glu Gly Ile Asp Phe Tyr Thr Ser Ile Thr Arg Ala Arg Phe Glu Glu
2897      290      295      300
2900 Leu Asn Ala Asp Leu Phe Arg Gly Thr Leu Asp Pro Val Glu Lys Ala
2901 305      310      315      320
2904 Leu Arg Asp Ala Lys Leu Asp Lys Ser Gln Ile His Asp Ile Val Leu
2905      325      330      335
2908 Val Gly Gly Ser Thr Arg Ile Pro Lys Ile Gln Lys Leu Leu Gln Asp
2909      340      345      350
2912 Phe Phe Asn Gly Lys Glu Leu Asn Lys Ser Ile Asn Pro Asp Glu Ala
2913      355      360      365
2916 Val Ala Tyr Gly Ala Ala Val Gln Ala Ala Ile Leu Ser Gly Asp Lys
2917      370      375      380
2920 Ser Glu Asn Val Gln Asp Leu Leu Leu Leu Asp Val Thr Pro Leu Ser
2921 385      390      395      400
2924 Leu Gly Ile Glu Thr Ala Gly Gly Val Met Thr Val Leu Ile Lys Arg
2925      405      410      415
2928 Asn Thr Thr Ile Pro Thr Lys Gln Thr Gln Thr Phe Thr Thr Tyr Ser
2929      420      425      430
2932 Asp Asn Gln Pro Gly Val Leu Ile Gln Val Tyr Glu Gly Glu Arg Ala
2933      435      440      445
2936 Met Thr Lys Asp Asn Asn Leu Leu Gly Lys Phe Glu Leu Thr Gly Ile
2937      450      455      460
2940 Pro Pro Ala Pro Arg Gly Val Pro Gln Ile Glu Val Thr Phe Asp Ile
2941 465      470      475      480
2944 Asp Ala Asn Gly Ile Leu Asn Val Ser Ala Val Asp Lys Ser Thr Gly
2945      485      490      495
2948 Lys Glu Asn Lys Ile Thr Ile Thr Asn Asp Lys Gly Arg Leu Ser Lys

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

TIME: 14:49:44

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

2949          500          505          510
2952 Glu Asp Ile Glu Arg Met Val Gln Glu Ala Glu Lys Tyr Lys Ala Glu
2953          515          520          525
2956 Asp Glu Lys Gln Arg Asp Lys Val Ser Ser Lys Asn Ser Leu Glu Ser
2957          530          535          540
2960 Tyr Ala Phe Asn Met Lys Ala Thr Val Glu Asp Glu Lys Leu Gln Gly
2961 545          550          555          560
2964 Lys Ile Asn Asp Glu Asp Lys Gln Lys Ile Leu Asp Lys Cys Asn Glu
2965          565          570          575
2968 Ile Ile Asn Trp Leu Asp Lys Asn Gln Thr Ala Glu Lys Glu Glu Phe
2969          580          585          590
2972 Glu His Gln Gln Lys Glu Leu Glu Lys Val Cys Asn Pro Ile Ile Thr
2973          595          600          605
2976 Lys Leu Tyr Gln Ser Ala Gly Gly Met Pro Gly Gly Met Pro Gly Gly
2977          610          615          620
2980 Phe Pro Gly Gly Gly Ala Pro Pro Ser Gly Gly Ala Ser Ser Gly Pro
2981 625          630          635          640
2984 Thr Ile Glu Glu Val Asp
2985          645

```

3305 <210> SEQ ID NO: 45 <211> 1183 <212> PRT <213> Staphylococcus aureus <400> 45

W--> 3307 <211> LENGTH:

W--> 3307 <212> TYPE:

W--> 3307 <213> ORGANISM:

E--> 3307 <400> SEQUENCE:

```

3307 Met Asn Lys Asn Val Leu Lys Phe Met Val Phe Ile Met Leu Leu Asn
3308 1          5          10          15
3311 Ile Ile Thr Pro Leu Phe Asn Lys Asn Glu Ala Phe Ala Ala Arg Asp
3312          20          25          30
3315 Ile Ser Ser Thr Asn Val Thr Asp Leu Thr Val Ser Pro Ser Lys Ile
3316          35          40          45
3319 Glu Asp Gly Gly Lys Thr Thr Val Lys Met Thr Phe Asp Asp Lys Asn
3320          50          55          60
3323 Gly Lys Ile Gln Asn Gly Asp Met Ile Lys Val Ala Trp Pro Thr Ser
3324 65          70          75          80
3327 Gly Thr Val Lys Ile Glu Gly Tyr Ser Lys Thr Val Pro Leu Thr Val
3328          85          90          95
3331 Lys Gly Glu Gln Val Gly Gln Ala Val Ile Thr Pro Asp Gly Ala Thr
3332          100         105         110
3335 Ile Thr Phe Asn Asp Lys Val Glu Lys Leu Ser Asp Val Ser Gly Phe
3336          115         120         125
3339 Ala Glu Phe Glu Val Gln Gly Arg Asn Leu Thr Gln Thr Asn Thr Ser
3340          130         135         140
3343 Asp Asp Lys Val Ala Thr Ile Thr Ser Gly Asn Lys Ser Thr Asn Val
3344 145         150         155         160
3347 Thr Val His Lys Ser Glu Ala Gly Thr Ser Ser Val Phe Tyr Tyr Lys
3348          165         170         175
3351 Thr Gly Asp Met Leu Pro Glu Asp Thr Thr His Val Arg Trp Phe Leu
3352          180         185         190
3355 Asn Ile Asn Asn Glu Lys Ser Tyr Val Ser Lys Asp Ile Thr Ile Lys

```

RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:45

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3356      195      200      205
3359 Asp Gln Ile Gln Gly Gly Gln Gln Leu Asp Leu Ser Thr Leu Asn Ile
3360      210      215      220
3363 Asn Val Thr Gly Thr His Ser Asn Tyr Tyr Ser Gly Gln Ser Ala Ile
3364 225      230      235      240
3367 Thr Asp Phe Glu Lys Ala Phe Pro Gly Ser Lys Ile Thr Val Asp Asn
3368      245      250      255
3371 Thr Lys Asn Thr Ile Asp Val Thr Ile Pro Gln Gly Tyr Gly Ser Tyr
3372      260      265      270
3375 Asn Ser Phe Ser Ile Asn Tyr Lys Thr Lys Ile Thr Asn Glu Gln Gln
3376      275      280      285
3379 Lys Glu Phe Val Asn Asn Ser Gln Ala Trp Tyr Gln Glu His Gly Lys
3380      290      295      300
3383 Glu Glu Val Asn Gly Lys Ser Phe Asn His Thr Val His Asn Ile Asn
3384 305      310      315      320
3387 Ala Asn Ala Gly Ile Glu Gly Thr Val Lys Gly Glu Leu Lys Val Leu
3388      325      330      335
3391 Lys Gln Asp Lys Asp Thr Lys Ala Pro Ile Ala Asn Val Lys Phe Lys
3392      340      345      350
3395 Leu Ser Lys Lys Asp Gly Ser Val Lys Asp Asn Gln Lys Glu Ile
3396      355      360      365
3399 Glu Ile Ile Thr Asp Ala Asn Gly Ile Ala Asn Ile Lys Ala Leu Pro
3400      370      375      380
3403 Ser Gly Asp Tyr Ile Leu Lys Glu Ile Glu Ala Pro Arg Pro Tyr Thr
3404 385      390      395      400
3407 Phe Asp Lys Asp Lys Glu Tyr Pro Phe Thr Met Lys Asp Thr Asp Asn
3408      405      410      415
3411 Gln Gly Tyr Phe Thr Thr Ile Glu Asn Ala Lys Ala Ile Glu Lys Thr
3412      420      425      430
3415 Lys Asp Val Ser Ala Gln Lys Val Trp Glu Gly Thr Gln Lys Val Lys
3416      435      440      445
3419 Pro Thr Ile Tyr Phe Lys Leu Tyr Lys Gln Asp Asp Asn Gln Asn Thr
3420      450      455      460
3423 Thr Pro Val Asp Lys Ala Glu Ile Lys Lys Leu Glu Asp Gly Thr Thr
3424 465      470      475      480
3427 Lys Val Thr Trp Ser Asn Leu Pro Glu Asn Asp Lys Asn Gly Lys Ala
3428      485      490      495
3431 Ile Lys Tyr Leu Val Lys Glu Val Asn Ala Gln Gly Glu Asp Thr Thr
3432      500      505      510
3435 Pro Glu Gly Tyr Thr Lys Lys Glu Asn Gly Leu Val Val Thr Asn Thr
3436      515      520      525
3439 Glu Lys Pro Ile Glu Thr Thr Ser Ile Ser Gly Glu Lys Val Trp Asp
3440      530      535      540
3443 Asp Lys Asp Asn Gln Asp Gly Lys Arg Pro Glu Lys Val Ser Val Asn
3444 545      550      555      560
3447 Leu Leu Ala Asn Gly Glu Lys Val Lys Thr Leu Asp Val Thr Ser Glu
3448      565      570      575
3451 Thr Asn Trp Lys Tyr Glu Phe Lys Asp Leu Pro Lys Tyr Asp Glu Gly
3452      580      585      590

```

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DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:45

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3455 Lys Lys Ile Glu Tyr Thr Val Thr Glu Asp His Val Lys Asp Tyr Thr
3456          595          600          605
3459 Thr Asp Ile Asn Gly Thr Thr Ile Thr Asn Lys Tyr Thr Pro Gly Glu
3460      610          615          620
3463 Thr Ser Ala Thr Val Thr Lys Asn Trp Asp Asp Asn Asn Asn Gln Asp
3464 625          630          635          640
3467 Gly Lys Arg Pro Thr Glu Ile Lys Val Glu Leu Tyr Gln Asp Gly Lys
3468          645          650          655
3471 Ala Thr Gly Lys Thr Ala Ile Leu Asn Glu Ser Asn Asn Trp Thr His
3472          660          665          670
3475 Thr Trp Thr Gly Leu Asp Glu Lys Ala Lys Gly Gln Gln Val Lys Tyr
3476      675          680          685
3479 Thr Val Glu Glu Leu Thr Lys Val Lys Gly Tyr Thr Thr His Val Asp
3480      690          695          700
3483 Asn Asn Asp Met Gly Asn Leu Ile Val Thr Asn Lys Tyr Thr Pro Glu
3484 705          710          715          720
3487 Thr Thr Ser Ile Ser Gly Glu Lys Val Trp Asp Asp Lys Asp Asn Gln
3488          725          730          735
3491 Asp Gly Lys Arg Pro Glu Lys Val Ser Val Asn Leu Leu Ala Asp Gly
3492          740          745          750
3495 Glu Lys Val Lys Thr Leu Asp Val Thr Ser Glu Thr Asn Trp Lys Tyr
3496      755          760          765
3499 Glu Phe Lys Asp Leu Pro Lys Tyr Asp Glu Gly Lys Lys Ile Glu Tyr
3500      770          775          780
3503 Thr Val Thr Glu Asp His Val Lys Asp Tyr Thr Thr Asp Ile Asn Gly
3504 785          790          795          800
3507 Thr Thr Ile Thr Asn Lys Tyr Thr Pro Gly Glu Thr Ser Ala Thr Val
3508          805          810          815
3511 Thr Lys Asn Trp Asp Asp Asn Asn Asn Gln Asp Gly Lys Arg Pro Thr
3512          820          825          830
3515 Glu Ile Lys Val Glu Leu Tyr Gln Asp Gly Lys Ala Thr Gly Lys Thr
3516      835          840          845
3519 Ala Ile Leu Asn Glu Ser Asn Asn Trp Thr His Thr Trp Thr Gly Leu
3520      850          855          860
3523 Asp Glu Lys Ala Lys Gly Gln Gln Val Lys Tyr Thr Val Glu Glu Leu
3524 865          870          875          880
3527 Thr Lys Val Lys Gly Tyr Thr Thr His Val Asp Asn Asn Asp Met Gly
3528          885          890          895
3531 Asn Leu Ile Val Thr Asn Lys Tyr Thr Pro Glu Thr Thr Ser Ile Ser
3532          900          905          910
3535 Gly Glu Lys Val Trp Asp Asp Lys Asp Asn Gln Asp Gly Lys Arg Pro
3536      915          920          925
3539 Glu Lys Val Ser Val Asn Leu Leu Ala Asn Gly Glu Lys Val Lys Thr
3540      930          935          940
3543 Leu Asp Val Thr Ser Glu Thr Asn Trp Lys Tyr Glu Phe Lys Asp Leu
3544 945          950          955          960
3547 Pro Lys Tyr Asp Glu Gly Lys Lys Ile Glu Tyr Thr Val Thr Glu Asp
3548          965          970          975
3551 His Val Lys Asp Tyr Thr Thr Asp Ile Asn Gly Thr Thr Ile Thr Asn

```

RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:45

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3552          980          985          990
3555 Lys Tyr Thr Pro Gly Glu Thr Ser Ala Thr Val Thr Lys Asn Trp Asp
3556          995          1000          1005
3559 Asp Asn Asn Asn Gln Asp Gly Lys Arg Pro Thr Glu Ile Lys Val
3560          1010          1015          1020
3563 Glu Leu Tyr Gln Asp Gly Lys Ala Thr Gly Lys Thr Ala Ile Leu
3564          1025          1030          1035
3567 Asn Glu Ser Asn Asn Trp Thr His Thr Trp Thr Gly Leu Asp Glu
3568          1040          1045          1050
3571 Lys Ala Lys Gly Gln Gln Val Lys Tyr Thr Val Asp Glu Leu Thr
3572          1055          1060          1065
3575 Lys Val Asn Gly Tyr Thr Thr His Val Asp Asn Asn Asp Met Gly
3576          1070          1075          1080
3579 Asn Leu Ile Val Thr Asn Lys Tyr Thr Pro Lys Lys Pro Asn Lys
3580          1085          1090          1095
3583 Pro Ile Tyr Pro Glu Lys Pro Lys Asp Lys Thr Pro Pro Thr Lys
3584          1100          1105          1110
3587 Pro Asp His Ser Asn Lys Val Lys Pro Thr Pro Pro Asp Lys Pro
3588          1115          1120          1125
3591 Ser Lys Val Asp Lys Asp Asp Gln Pro Lys Asp Asn Lys Thr Lys
3592          1130          1135          1140
3595 Pro Glu Asn Pro Leu Lys Glu Leu Pro Lys Thr Gly Met Lys Ile
3596          1145          1150          1155
3599 Ile Thr Ser Trp Ile Thr Trp Val Phe Ile Gly Ile Leu Gly Leu
3600          1160          1165          1170
3603 Tyr Leu Ile Leu Arg Lys Arg Phe Asn Ser
3604          1175          1180

```

E--> 3625 <210> SEQ ID NO: 49 <211> 237 <212> PRT <213> Homo sapiens <400> 49

W--> 3627 <211> LENGTH:

W--> 3627 <212> TYPE:

W--> 3627 <213> ORGANISM:

E--> 3627 <400> SEQUENCE:

```

3627 Met Thr Ser Glu Ile Thr Tyr Ala Glu Val Arg Phe Lys Asn Glu Phe
3628 1          5          10          15
3631 Lys Ser Ser Gly Ile Asn Thr Ala Ser Ser Ala Ala Ser Lys Glu Arg
3632          20          25          30
3635 Thr Ala Pro His Lys Ser Asn Thr Gly Phe Pro Lys Leu Leu Cys Ala
3636          35          40          45
3639 Ser Leu Leu Ile Phe Phe Leu Leu Ala Ile Ser Phe Phe Ile Ala
3640          50          55          60
3643 Phe Val Ile Phe Phe Gln Lys Tyr Ser Gln Leu Leu Glu Lys Lys Thr
3644 65          70          75          80
3647 Thr Lys Glu Leu Val His Thr Thr Leu Glu Cys Val Lys Lys Asn Met
3648          85          90          95
3651 Pro Val Glu Glu Thr Ala Trp Ser Cys Cys Pro Lys Asn Trp Lys Ser
3652          100          105          110
3655 Phe Ser Ser Asn Cys Tyr Phe Ile Ser Thr Glu Ser Ala Ser Trp Gln
3656          115          120          125
3659 Asp Ser Glu Lys Asp Cys Ala Arg Met Glu Ala His Leu Leu Val Ile

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/751,708

DATE: 03/15/2002

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3660      130      135      140
3663 Asn Thr Gln Glu Glu Gln Asp Phe Ile Phe Gln Asn Leu Gln Glu Glu
3664 145      150      155      160
3667 Ser Ala Tyr Phe Val Gly Leu Ser Asp Pro Glu Gly Gln Arg His Trp
3668      165      170      175
3671 Gln Trp Val Asp Gln Thr Pro Tyr Asn Glu Ser Ser Thr Phe Trp His
3672      180      185      190
3675 Pro Arg Glu Pro Ser Asp Pro Asn Glu Arg Cys Val Val Leu Asn Phe
3676      195      200      205
3679 Arg Lys Ser Pro Lys Arg Trp Gly Trp Asn Asp Val Asn Cys Leu Gly
3680      210      215      220
3683 Pro Gln Arg Ser Val Cys Glu Met Met Lys Ile His Leu
3684 225      230      235
E--> 3687 <210> SEQ ID NO: 53 <211> 32 <212> PRT <213> Homo sapiens <220> <221> MISC_FEATURE
E--> 3727 <210> SEQ ID NO: 56 <211> 626 <212> PRT <213> Homo sapiens <400> 56
W--> 3729 <211> LENGTH:
W--> 3729 <212> TYPE:
W--> 3729 <213> ORGANISM:
E--> 3729 <400> SEQUENCE:
3729 Met Ile Phe Leu Thr Ala Leu Pro Leu Phe Trp Ile Met Ile Ser Ala
3730 1      5      10      15
3733 Ser Arg Gly Gly His Trp Gly Ala Trp Met Pro Ser Ser Ile Ser Ala
3734      20      25      30
3737 Phe Glu Gly Thr Cys Val Ser Ile Pro Cys Arg Phe Asp Phe Pro Asp
3738      35      40      45
3741 Glu Leu Arg Pro Ala Val Val His Gly Val Trp Tyr Phe Asn Ser Pro
3742      50      55      60
3745 Tyr Pro Lys Asn Tyr Pro Pro Val Val Phe Lys Ser Arg Thr Gln Val
3746 65      70      75      80
3749 Val His Glu Ser Phe Gln Gly Arg Ser Arg Leu Leu Gly Asp Leu Gly
3750      85      90      95
3753 Leu Arg Asn Cys Thr Leu Leu Leu Ser Asn Val Ser Pro Glu Leu Gly
3754      100     105     110
3757 Gly Lys Tyr Tyr Phe Arg Gly Asp Leu Gly Gly Tyr Asn Gln Tyr Thr
3758      115     120     125
3761 Phe Ser Glu His Ser Val Leu Asp Ile Val Asn Thr Pro Asn Ile Val
3762      130     135     140
3765 Val Pro Pro Glu Val Val Ala Gly Thr Glu Val Glu Val Ser Cys Met
3766 145     150     155     160
3769 Val Pro Asp Asn Cys Pro Glu Leu Arg Pro Glu Leu Ser Trp Leu Gly
3770      165     170     175
3773 His Glu Gly Leu Gly Glu Pro Ala Val Leu Gly Arg Leu Arg Glu Asp
3774      180     185     190
3777 Glu Gly Thr Trp Val Gln Val Ser Leu Leu His Phe Val Pro Thr Arg
3778      195     200     205
3781 Glu Ala Asn Gly His Arg Leu Gly Cys Gln Ala Ser Phe Pro Asn Thr
3782      210     215     220
3785 Thr Leu Gln Phe Glu Gly Tyr Ala Ser Met Asp Val Lys Tyr Pro Pro
3786 225     230     235     240

```

same

RAW SEQUENCE LISTING

DATE: 03/15/2002

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3789 Val Ile Val Glu Met Asn Ser Ser Val Glu Ala Ile Glu Gly Ser His
3790                245                250                255
3793 Val Ser Leu Leu Cys Gly Ala Asp Ser Asn Pro Pro Pro Leu Leu Thr
3794                260                265                270
3797 Trp Met Arg Asp Gly Thr Val Leu Arg Glu Ala Val Ala Glu Ser Leu
3798                275                280                285
3801 Leu Leu Glu Leu Glu Glu Val Thr Pro Ala Glu Asp Gly Val Tyr Ala
3802                290                295                300
3805 Cys Leu Ala Glu Asn Ala Tyr Gly Gln Asp Asn Arg Thr Val Gly Leu
3806 305                310                315                320
3809 Ser Val Met Tyr Ala Pro Trp Lys Pro Thr Val Asn Gly Thr Met Val
3810                325                330                335
3813 Ala Val Glu Gly Glu Thr Val Ser Ile Leu Cys Ser Thr Gln Ser Asn
3814                340                345                350
3817 Pro Asp Pro Ile Leu Thr Ile Phe Lys Glu Lys Gln Ile Leu Ser Thr
3818                355                360                365
3821 Val Ile Tyr Glu Ser Glu Leu Gln Leu Glu Leu Pro Ala Val Ser Pro
3822                370                375                380
3825 Glu Asp Asp Gly Glu Tyr Trp Cys Val Ala Glu Asn Gln Tyr Gly Gln
3826 385                390                395                400
3829 Arg Ala Thr Ala Phe Asn Leu Ser Val Glu Phe Ala Pro Val Leu Leu
3830                405                410                415
3833 Leu Glu Ser His Cys Ala Ala Ala Arg Asp Thr Val Gln Cys Leu Cys
3834                420                425                430
3837 Val Val Lys Ser Asn Pro Glu Pro Ser Val Ala Phe Glu Leu Pro Ser
3838                435                440                445
3841 Arg Asn Val Thr Val Asn Glu Ser Glu Arg Glu Phe Val Tyr Ser Glu
3842                450                455                460
3845 Arg Ser Gly Leu Val Leu Thr Ser Ile Leu Thr Leu Arg Gly Gln Ala
3846 465                470                475                480
3849 Gln Ala Pro Pro Arg Val Ile Cys Thr Ala Arg Asn Leu Tyr Gly Ala
3850                485                490                495
3853 Lys Ser Leu Glu Leu Pro Phe Gln Gly Ala His Arg Leu Met Trp Ala
3854                500                505                510
3857 Lys Ile Gly Pro Val Gly Ala Val Val Ala Phe Ala Ile Leu Ile Ala
3858                515                520                525
3861 Ile Val Cys Tyr Ile Thr Gln Thr Arg Arg Lys Lys Asn Val Thr Glu
3862                530                535                540
3865 Ser Pro Ser Phe Ser Ala Gly Asp Asn Pro Pro Val Leu Phe Ser Ser
3866 545                550                555                560
3869 Asp Phe Arg Ile Ser Gly Ala Pro Glu Lys Tyr Glu Ser Glu Arg Arg
3870                565                570                575
3873 Leu Gly Ser Glu Arg Arg Leu Leu Gly Leu Arg Gly Glu Pro Pro Glu
3874                580                585                590
3877 Leu Asp Leu Ser Tyr Ser His Ser Asp Leu Gly Lys Arg Pro Thr Lys
3878                595                600                605
3881 Asp Ser Tyr Thr Leu Thr Glu Glu Leu Ala Glu Tyr Ala Glu Ile Arg
3882                610                615                620
3885 Val Lys

```

RAW SEQUENCE LISTING

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Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

3886 625
 E--> 3893 <210> SEQ ID NO: 63 <211> 209 <212> PRT <213> Homo sapiens <400> 63
 W--> 3895 <211> LENGTH:
 W--> 3895 <212> TYPE:
 W--> 3895 <213> ORGANISM:
 E--> 3895 <400> SEQUENCE:

Same

3895 Met Ala Leu Leu Ala Glu His Leu Leu Lys Pro Leu Pro Ala Asp Lys
 3896 1 5 10 15
 3899 Gln Ile Glu Thr Gly Pro Phe Leu Glu Ala Val Ser His Leu Pro Pro
 3900 20 25 30
 3903 Phe Phe Asp Cys Leu Gly Ser Pro Val Phe Thr Pro Ile Lys Ala Asp
 3904 35 40 45
 3907 Ile Ser Gly Asn Ile Thr Lys Ile Lys Ala Val Tyr Asp Thr Asn Pro
 3908 50 55 60
 3911 Ala Lys Phe Arg Thr Leu Gln Asn Ile Leu Glu Val Glu Lys Glu Met
 3912 65 70 75 80
 3915 Tyr Gly Ala Glu Trp Pro Lys Val Gly Ala Thr Leu Ala Leu Met Trp
 3916 85 90 95
 3919 Leu Lys Arg Gly Leu Arg Phe Ile Gln Val Phe Leu Gln Ser Ile Cys
 3920 100 105 110
 3923 Asp Gly Glu Arg Asp Glu Asn His Pro Asn Leu Ile Arg Val Asn Ala
 3924 115 120 125
 3927 Thr Lys Ala Tyr Glu Met Ala Leu Lys Lys Tyr His Gly Trp Ile Val
 3928 130 135 140
 3931 Gln Lys Ile Phe Gln Ala Ala Leu Tyr Ala Ala Pro Tyr Lys Ser Asp
 3932 145 150 155 160
 3935 Phe Leu Lys Ala Leu Ser Lys Gly Gln Asn Val Thr Glu Glu Glu Cys
 3936 165 170 175
 3939 Leu Glu Lys Ile Arg Leu Phe Leu Val Asn Tyr Thr Ala Thr Ile Asp
 3940 180 185 190
 3943 Val Ile Tyr Glu Met Tyr Thr Gln Met Asn Ala Glu Leu Asn Tyr Lys
 3944 195 200 205
 3947 Val

3951 <210> SEQ ID NO: 64 <211> 276 <212> PRT <213> Homo sapiens <400> 64
 W--> 3953 <211> LENGTH:
 W--> 3953 <212> TYPE:
 W--> 3953 <213> ORGANISM:
 E--> 3953 <400> SEQUENCE:

3953 Met Gly Asn Ser Met Lys Ser Thr Pro Ala Pro Ala Glu Arg Pro Leu
 3954 1 5 10 15
 3957 Pro Asn Pro Glu Gly Leu Asp Ser Asp Phe Leu Ala Val Leu Ser Asp
 3958 20 25 30
 3961 Tyr Pro Ser Pro Asp Ile Ser Pro Pro Ile Phe Arg Arg Gly Glu Lys
 3962 35 40 45
 3965 Leu Arg Val Ile Ser Asp Glu Gly Gly Trp Trp Lys Ala Ile Ser Leu
 3966 50 55 60
 3969 Ser Thr Gly Arg Glu Ser Tyr Ile Pro Gly Ile Cys Val Ala Arg Val
 3970 65 70 75 80
 3973 Tyr His Gly Trp Leu Phe Glu Gly Leu Gly Arg Asp Lys Ala Glu Glu

RAW SEQUENCE LISTING

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:45

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

```

3974          85          90          95
3977 Leu Leu Gln Leu Pro Asp Thr Lys Val Gly Ser Phe Met Ile Arg Glu
3978          100         105         110
3981 Ser Glu Thr Lys Lys Gly Phe Tyr Ser Leu Ser Val Arg His Arg Gln
3982          115         120         125
3985 Val Lys His Tyr Arg Ile Phe Arg Leu Pro Asn Asn Trp Tyr Tyr Ile
3986          130         135         140
3989 Ser Pro Arg Leu Thr Phe Gln Cys Leu Glu Asp Leu Val Asn His Tyr
3990 145          150         155         160
3993 Ser Glu Val Ala Asp Gly Leu Cys Cys Val Leu Thr Thr Pro Cys Leu
3994          165         170         175
3997 Thr Gln Ser Thr Ala Ala Pro Ala Val Arg Ala Ser Ser Ser Pro Val
3998          180         185         190
4001 Thr Leu Arg Gln Lys Thr Val Asp Trp Arg Arg Val Ser Arg Leu Gln
4002          195         200         205
4005 Glu Asp Pro Glu Gly Thr Glu Asn Pro Leu Gly Val Asp Glu Ser Leu
4006          210         215         220
4009 Phe Ser Tyr Gly Leu Arg Glu Ser Ile Ala Ser Tyr Leu Ser Leu Thr
4010 225          230         235         240
4013 Ser Glu Asp Asn Thr Ser Phe Asp Arg Lys Lys Lys Ser Ile Ser Leu
4014          245         250         255
4017 Met Tyr Gly Gly Ser Lys Arg Lys Ser Ser Phe Phe Ser Ser Pro Pro
4018          260         265         270
4021 Tyr Phe Glu Asp
4022          275

```

E--> 19380 <210> SEQ ID NO: 145 <211> 31 <212> DNA <213> Unknown <220> <223> Primer

Same

VERIFICATION SUMMARY

DATE: 03/15/2002

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TIME: 14:49:48

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

L:2 M:283 W: Missing Blank Line separator, <130> field identifier
L:0 M:201 W: Mandatory field data missing, TITLE INVENTION
L:3 M:283 W: Missing Blank Line separator, <140> field identifier
L:3 M:270 C: Current Application Number differs, Replaced Current Application Number
L:4 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:4 M:283 W: Missing Blank Line separator, <160> field identifier
L:5 M:282 W: Numeric Field Identifier Missing, <210> is required.
L:5 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:5 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:5 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:5 M:212 E: (34) Invalid or duplicate Sequence ID Number, SEQ ID NO
L:5 M:283 W: Missing Blank Line separator, <400> field identifier
L:36 M:259 W: Allowed number of lines exceeded, <210> SEQ ID NO
L:38 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:38 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:38 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:72 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:72 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:72 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:78 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:78 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:78 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:84 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:84 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:84 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:90 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:90 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:90 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:97 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:97 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:97 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:191 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:191 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:191 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:191 M:200 E: Mandatory Header Field missing, <400> is required.
L:262 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:262 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:262 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:364 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:364 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:364 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:364 M:200 E: Mandatory Header Field missing, <400> is required.
L:435 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:435 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:435 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:517 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:517 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:517 M:282 W: Numeric Field Identifier Missing, <213> is required.

VERIFICATION SUMMARY

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TIME: 14:49:48

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

L:517 M:200 E: Mandatory Header Field missing, <400> is required.
L:588 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:588 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:588 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:672 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:672 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:672 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:672 M:200 E: Mandatory Header Field missing, <400> is required.
L:743 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:743 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:743 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:811 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:811 M:282 W: Numeric Field Identifier Missing, <212> is required.
L:811 M:282 W: Numeric Field Identifier Missing, <213> is required.
L:811 M:200 E: Mandatory Header Field missing, <400> is required.
L:878 M:282 W: Numeric Field Identifier Missing, <211> is required.
L:944 M:200 E: Mandatory Header Field missing, <400> is required.
L:1085 M:200 E: Mandatory Header Field missing, <400> is required.
L:1296 M:200 E: Mandatory Header Field missing, <400> is required.
L:1378 M:200 E: Mandatory Header Field missing, <400> is required.
L:1685 M:200 E: Mandatory Header Field missing, <400> is required.
L:1934 M:259 W: Allowed number of lines exceeded, <210> SEQ ID NO
L:1936 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:1938 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:1940 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:2013 M:200 E: Mandatory Header Field missing, <400> is required.
L:2059 M:200 E: Mandatory Header Field missing, <400> is required.
L:2210 M:200 E: Mandatory Header Field missing, <400> is required.
L:2461 M:200 E: Mandatory Header Field missing, <400> is required.
L:2824 M:200 E: Mandatory Header Field missing, <400> is required.
L:3307 M:200 E: Mandatory Header Field missing, <400> is required.
L:3610 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3625 M:216 E: (34) Seq.#s missing, SEQ ID NOS: 47 thru 48
L:3627 M:200 E: Mandatory Header Field missing, <400> is required.
L:3687 M:216 E: (34) Seq.#s missing, SEQ ID NOS: 50 thru 52
L:3690 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3692 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3694 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3696 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3698 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3700 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3715 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:3727 M:214 E: (33) Seq.# missing, SEQ ID NO:55
L:3729 M:200 E: Mandatory Header Field missing, <400> is required.
L:3893 M:216 E: (34) Seq.#s missing, SEQ ID NOS: 57 thru 62
L:3895 M:200 E: Mandatory Header Field missing, <400> is required.
L:3953 M:200 E: Mandatory Header Field missing, <400> is required.
L:4027 M:200 E: Mandatory Header Field missing, <400> is required.
L:4037 M:200 E: Mandatory Header Field missing, <400> is required.

VERIFICATION SUMMARY

DATE: 03/15/2002

PATENT APPLICATION: US/09/751,708

TIME: 14:49:48

Input Set : N:\EBONY'S\EP.txt

Output Set: N:\CRF3\03152002\I751708.raw

L:4186 M:200 E: Mandatory Header Field missing, <400> is required.
L:4341 M:200 E: Mandatory Header Field missing, <400> is required.
L:4368 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:4370 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:4498 M:200 E: Mandatory Header Field missing, <400> is required.
L:4592 M:200 E: Mandatory Header Field missing, <400> is required.
L:4686 M:200 E: Mandatory Header Field missing, <400> is required.
L:4797 M:200 E: Mandatory Header Field missing, <400> is required.
L:4906 M:200 E: Mandatory Header Field missing, <400> is required.
L:5109 M:200 E: Mandatory Header Field missing, <400> is required.
L:5334 M:200 E: Mandatory Header Field missing, <400> is required.
L:6061 M:200 E: Mandatory Header Field missing, <400> is required.
L:6376 M:200 E: Mandatory Header Field missing, <400> is required.
L:6717 M:200 E: Mandatory Header Field missing, <400> is required.
L:6848 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:6882 M:200 E: Mandatory Header Field missing, <400> is required.
L:6912 M:200 E: Mandatory Header Field missing, <400> is required.
L:7049 M:200 E: Mandatory Header Field missing, <400> is required.
L:7498 M:200 E: Mandatory Header Field missing, <400> is required.
L:7871 M:200 E: Mandatory Header Field missing, <400> is required.
L:8029 M:200 E: Mandatory Header Field missing, <400> is required.
L:8210 M:200 E: Mandatory Header Field missing, <400> is required.
L:8247 M:200 E: Mandatory Header Field missing, <400> is required.
L:8479 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8793 M:200 E: Mandatory Header Field missing, <400> is required.
L:8903 M:200 E: Mandatory Header Field missing, <400> is required.
L:8966 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8968 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8970 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8972 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8974 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:8976 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:9608 M:200 E: Mandatory Header Field missing, <400> is required.
L:9698 M:200 E: Mandatory Header Field missing, <400> is required.
L:9796 M:200 E: Mandatory Header Field missing, <400> is required.
L:9866 M:200 E: Mandatory Header Field missing, <400> is required.
L:9948 M:200 E: Mandatory Header Field missing, <400> is required.
L:10046 M:200 E: Mandatory Header Field missing, <400> is required.
L:19380 M:216 E: (34) Seq.#s missing, SEQ ID NOS: 143 thru 144
L:19514 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:19516 M:256 W: Invalid Numeric Header Field, <220> has non-blank data
L:4 M:203 E: No. of Seq. differs, <160> Number Of Sequences:Input (166) Counted (82)